

Assoc. Prof. HACI HULUSİ KAFALIGÖNÜL

Personal Information

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Biography

Dr. Hulusi Kafaligönül received a B.S. degree in Electrical and Electronics Engineering from Boğaziçi University and a Ph.D. in Electrical and Computer Engineering from the University of Houston. From 2008 to 2013, he was a postdoctoral research associate at the Salk Institute for Biological Studies. Since 2013, he has been a faculty member at Bilkent University. He also served as an associate director for Aysel Sabuncu Brain Research Center between 2022 and 2024. Starting 2024, he is a faculty member at Neuroscience and Neurotechnology Center of Excellence (NÖROM) and Faculty of Medicine at Gazi University. His research has been supported by scientific organizations such as British Academy, EU Marie Curie Actions, and TÜBİTAK. Dr. Kafaligönül has received several prestigious scientific awards, including the KIBM Innovative Research Award (2008), TÜBA-GEBİP Outstanding Young Scientist Award (2020), METU Prof. Dr. Mustafa Parlar Foundation Research Incentive Award (2021), and BAGEP Young Scientist Award (2022).

Education Information

Post Doctorate, The Salk Institute for Biological Studies, Systems Neurobiology Laboratory, Neuroscience, United States Of America 2008 - 2013

Doctorate, University of Houston, Cullen College of Engineering, Electrical & Computer Engineering, United States Of America 2003 - 2007

Undergraduate, Bogazici University, Faculty of Engineering, Electrical & Electronics Engineering, Turkey 1999 - 2003

Foreign Languages

English, C1 Advanced

Research Areas

Neural Networks, Neurobiology, Neuroanatomy, Neurophysiology, Fundamental Medical Sciences, Neurophysiology

Academic Titles / Tasks

Associate Professor, Neuroscience and Neurotechnology Center of Excellence (NÖROM), Cognitive Electrophysiology, 2024 - Continues

Associate Professor, Gazi University, Tıp Fakültesi, Temel Tıp Bilimleri, 2024 - Continues

Assistant Professor, Ihsan Dogramaci Bilkent University, Graduate School of Engineering and Science, Neuroscience,

2013 - 2024

Researcher, The Salk Institute for Biological Studies, Systems Neurobiology Laboratory, 2008 - 2013

Research Assistant, University of Houston, Cullen College of Engineering, Electrical & Computer Engineering, 2003 - 2008

Academic and Administrative Experience

Deputy Director of the Center, Ihsan Dogramaci Bilkent University, Aysel Sabuncu Brain Research Center, 2022 - 2024

Applied Research Center Board Member, Ihsan Dogramaci Bilkent University, Aysel Sabuncu Brain Research Center, 2019 - 2022

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Attentional load leads to distinct changes in early and late cortical processing of target visibility under visual masking**
Catak E. N., Ogmen H., Kafaligonul H.
Consciousness and Cognition, vol.125, 2024 (SSCI)
- II. **The phase coherence of cortical oscillations predicts dynamic changes in perceived visibility**
Akdogan I., Ogmen H., Kafaligonul H.
CEREBRAL CORTEX, vol.34, no.9, 2024 (SCI-Expanded)
- III. **Attentional demands in the visual field modulate audiovisual interactions in the temporal domain**
Yilmaz S. K., Kafaligonul H. H.
HUMAN BRAIN MAPPING, vol.45, no.12, 2024 (SCI-Expanded)
- IV. **Passive exposure to visual motion leads to short-term changes in the optomotor response of aging zebrafish**
Karaduman A., Karoglu-Eravsar E. T., Adams M. M., Kafaligonul H. H.
BEHAVIOURAL BRAIN RESEARCH, vol.460, 2024 (SCI-Expanded)
- V. **Long-term Acetylcholinesterase Depletion Alters the Levels of Key Synaptic Proteins while Maintaining Neuronal Markers in the Aging Zebrafish (Danio rerio) Brain**
Karoglu-Eravsar E. T., Tuz-Sasik M. U., Karaduman A., Keskus A. G., Arslan-Ergul A., Konu O., Kafaligonul H. H., Adams M. M.
GERONTOLOGY, vol.69, no.12, pp.1424-1436, 2023 (SCI-Expanded)
- VI. **Zebrafish optomotor response to second-order motion illustrates that age-related changes in motion detection depend on the activated motion system**
Karaduman A., Karoglu-Eravsar E. T., Kaya U., AYDIN A., Adams M. M., Kafaligonul H. H.
NEUROBIOLOGY OF AGING, vol.130, pp.12-21, 2023 (SCI-Expanded)
- VII. **A comparison of equivalent noise methods in investigating local and global form and motion integration**
Pavan A., Contillo A., Yilmaz S. K., Kafaligonul H. H., Donato R., O'Hare L.
ATTENTION PERCEPTION & PSYCHOPHYSICS, vol.85, no.1, pp.152-165, 2023 (SCI-Expanded)
- VIII. **Examining the Effects of Contrast Ratio on Metacontrast Masking with Electroencephalography**
Akdogan I., Kafaligonul H. H.
PERCEPTION, pp.142, 2022 (SCI-Expanded)
- IX. **A Comparison of Equivalent Noise Methods in Investigating Form/Motion Integration**
Yilmaz S. K., Contillo A., O'Hare L., Kafaligonul H. H., Donato R., Pavan A.
PERCEPTION, pp.31, 2022 (SCI-Expanded)
- X. **EEG Correlates of Inhibitory Processes Involved in Paracontrast Masking**
Turker A., Kafaligonul H. H.
PERCEPTION, pp.141, 2022 (SCI-Expanded)
- XI. **Attentional modulations of audiovisual interactions in apparent motion: Temporal ventriloquism**

effects on perceived visual speed

Duyar A., Pavan A., Kafaligonul H. H.

ATTENTION PERCEPTION & PSYCHOPHYSICS, vol.84, no.7, pp.2167-2185, 2022 (SCI-Expanded)

- XII. **Motion processing impaired by transient spatial attention: Potential implications for the magnocellular pathway**
Pavan A., Yilmaz S. K., Kafaligonul H. H., Battaglini L., Blurton S. P.
VISION RESEARCH, vol.199, 2022 (SCI-Expanded)
- XIII. **Behavioral and ERP evidence that object-based attention utilizes fine-grained spatial mechanisms**
Catak E. N., Ozkan M., Kafaligonul H. H., Stoner G. R.
CORTEX, vol.151, pp.89-104, 2022 (SCI-Expanded)
- XIV. **Electrophysiological Investigation of Attentional Modulation on Metacontrast Masking**
Catak E. N., Kafaligonul H. H.
PERCEPTION, no.1_SUPPL, pp.181, 2021 (SCI-Expanded)
- XV. **The Effect of Transient Attention on Motion Processing: Implications for the Magnocellular Pathway**
Yilmaz S. K., Pavan A., Kafaligonul H. H., Battaglini L., Blurton S. P.
PERCEPTION, no.1_SUPPL, pp.71-72, 2021 (SCI-Expanded)
- XVI. **Neural correlates of metacontrast masking across different contrast polarities**
AYDIN A., Ogmen H., Kafaligonul H. H.
BRAIN STRUCTURE & FUNCTION, vol.226, no.9, pp.3067-3081, 2021 (SCI-Expanded)
- XVII. **Audiovisual interactions in speeded discrimination of a visual event**
Kaya U., Kafaligonul H. H.
PSYCHOPHYSIOLOGY, vol.58, no.4, 2021 (SCI-Expanded)
- XVIII. **The optomotor response of aging zebrafish reveals a complex relationship between visual motion characteristics and cholinergic system**
Karaduman A., Karoglu-Eravsar E. T., Kaya U., AYDIN A., Adams M. M., Kafaligonul H. H.
NEUROBIOLOGY OF AGING, vol.98, pp.21-32, 2021 (SCI-Expanded)
- XIX. **Dietary and Pharmacological Interventions That Inhibit Mammalian Target of Rapamycin Activity Alter the Brain Expression Levels of Neurogenic and Glial Markers in an Age-and Treatment-Dependent Manner**
Celebi-Birand D., Ardic N. I., Karoglu-Eravsar E. T., Sengul G. F., Kafaligonul H. H., Adams M. M.
REJUVENATION RESEARCH, vol.23, no.6, pp.485-497, 2020 (SCI-Expanded)
- XX. **Short- and long-term forms of neural adaptation: An ERP investigation of dynamic motion aftereffects**
Akyuz S., Pavan A., Kaya U., Kafaligonul H. H.
CORTEX, vol.125, pp.122-134, 2020 (SCI-Expanded)
- XXI. **Cortical processes underlying the effects of static sound timing on perceived visual speed**
Kaya U., Kafaligonul H. H.
NEUROIMAGE, vol.199, pp.194-205, 2019 (SCI-Expanded)
- XXII. **Attentional Modulation of Audiovisual Interactions in Time: Temporal Ventriloquism in Visual Apparent Motion**
Duyar A., Kafaligonul H. H.
PERCEPTION, pp.100-101, 2019 (SCI-Expanded)
- XXIII. **Neural Mechanisms Underlying Short- and Long-Term Forms of Plasticity Probed With a Motion-Adaptation Paradigm**
Akyuz S., Pavan A., Kafaligonul H. H.
PERCEPTION, pp.98, 2019 (SCI-Expanded)
- XXIV. **Zebrafish-A Model Organism for Studying the Neurobiological Mechanisms Underlying Cognitive Brain Aging and Use of Potential Interventions**
Adams M. M., Kafaligonu H. H.
FRONTIERS IN CELL AND DEVELOPMENTAL BIOLOGY, 2018 (SCI-Expanded)
- XXV. **Auditory modulation of spiking activity and local field potentials in area MT does not appear to**

underlie an audiovisual temporal illusion

Kafaligonul H. H., Albright T. D., Stoner G. R.

JOURNAL OF NEUROPHYSIOLOGY, vol.120, no.3, pp.1340-1355, 2018 (SCI-Expanded)

- XXVI. **Temporal ventriloquism along the path of apparent motion: speed perception under different spatial grouping principles**
Ogulmus C., Karacaoglu M., Kafaligonul H. H.
EXPERIMENTAL BRAIN RESEARCH, vol.236, no.3, pp.629-643, 2018 (SCI-Expanded)
- XXVII. **The involvement of centralized and distributed processes in sub-second time interval adaptation: an ERP investigation of apparent motion**
Kaya U., Yildirim F. Z., Kafaligonul H. H.
EUROPEAN JOURNAL OF NEUROSCIENCE, vol.46, no.8, pp.2325-2338, 2017 (SCI-Expanded)
- XXVIII. **Rapid Motion Adaptation Reveals the Temporal Dynamics of Spatiotemporal Correlation between ON and OFF Pathways**
Oluk C., Pavan A., Kafaligonul H. H.
SCIENTIFIC REPORTS, vol.6, 2016 (SCI-Expanded)
- XXIX. **Feedforward and feedback processes in vision**
Kafaligonul H. H., Breitmeyer B. G., Oegmen H.
FRONTIERS IN PSYCHOLOGY, vol.6, 2015 (SSCI)
- XXX. **Altering perception of low-level visual motion by audiovisual associations**
Kafaligonul H. H., Oluk C.
PERCEPTION, no.1, pp.36, 2014 (SCI-Expanded)
- XXXI. **Static sound timing alters sensitivity to low-level visual motion**
Kafaligonul H. H., Stoner G. R.
JOURNAL OF VISION, vol.12, no.11, 2012 (SCI-Expanded)
- XXXII. **Auditory modulation of visual apparent motion with short spatial and temporal intervals**
Kafaligonul H. H., Stoner G. R.
JOURNAL OF VISION, vol.10, no.12, pp.1-13, 2010 (SCI-Expanded)
- XXXIII. **Effects of contrast polarity in paracontrast masking**
Kafaligoenuel H. H., Breitmeyer B. G., Oegmen H.
ATTENTION PERCEPTION & PSYCHOPHYSICS, vol.71, no.7, pp.1576-1587, 2009 (SCI-Expanded)
- XXXIV. **Metacontrast masking and stimulus contrast polarity**
Breitmeyer B. G., Tapia E., Kafaligoenuel H. H., Oegmen H.
VISION RESEARCH, vol.48, no.23-24, pp.2433-2438, 2008 (SCI-Expanded)
- XXXV. **Meta- and paracontrast reveal differences between contour- and brightness-processing mechanisms**
Breitmeyer B. G., Kafaligonul H. H., Oegmen H., Mardon L., Todd S., Ziegler R.
VISION RESEARCH, vol.46, no.17, pp.2645-2658, 2006 (SCI-Expanded)

Articles Published in Other Journals

- I. **Examining the Effects of Audiovisual Associations on Motion Perception through Task-based fMRI**
Kafaligonul H. H.
DUSUNEN ADAM-JOURNAL OF PSYCHIATRY AND NEUROLOGICAL SCIENCES, vol.31, no.2, pp.125-134, 2018 (ESCI)
- II. **Audiovisual associations alter the perception of low-level visual motion**
Kafaligonul H. H., Oluk C.
FRONTIERS IN INTEGRATIVE NEUROSCIENCE, vol.9, 2015 (ESCI)

Books & Book Chapters

- I. **The zebrafish (Danio rerio) and its uses for understanding the neuroscience of aging: applications**

and observation

Celebi-Birand D., Tuz-Sasik M. U., Ardic-Avci N. I., Aydogan H. O., Erbaba B., Karoglu-Eravsar E. T., Kafaligonul H., Adams M. M.

in: Assessments, Treatments and Modeling in Aging and Neurological Disease, Martin CR, Preedy VR, Rajendram R, Editor, Academic Press, Londrina, pp.491-503, 2021

II. Zebrafish aging models and possible interventions

Celebi Birand D., Erbaba B., Ozdemir A. T., Kafaligonul H. H., Adams M.

in: Recent Advances in Zebrafish Researches, Yusuf Bozkurt, Editor, IntechOpen, Londrina, pp.3-26, 2018

III. Perceptual asynchronies and the dual-channel differential latency hypothesis

Kafalgönül H. H., Patel S. S., Öğmen H., Bedell H. E., Purushothaman G.

in: Space and Time in Perception and Action, Romi Nijhawan, Beena Khurana, Editor, Cambridge University Press, New York, pp.379-395, 2010

Activities in Scientific Journals

Frontiers in Cognition, Committee Member, 2023 - Continues

FRONTIERS IN PSYCHOLOGY, Committee Member, 2013 - Continues

FRONTIERS IN NEUROSCIENCE, Committee Member, 2013 - Continues

Memberships / Tasks in Scientific Organizations

Turkish Academy of Sciences, Member, 2021 - Continues, Turkey

American Physiological Association , Member, 2018 - Continues, United States Of America

Society for Neuroscience, Member, 2008 - Continues, United States Of America

Vision Sciences Society, Member, 2006 - Continues, United States Of America

Awards

Kafalgönül H. H., Distinguished Young Scientist Award , Bilim Akademisi, March 2022

Kafalgönül H. H., Research Incentive Award, Odtü Prof. Dr. Mustafa Parlar Vakfı, December 2021

Kafalgönül H. H., Outstanding Young Scientist Award , Türkiye Bilimler Akademisi , December 2020

Kafalgönül H. H., KIBM Innovative Research Award, The Kavli Institute For Brain And Mind, Kaliforniya Üniversitesi (Ucsd), June 2008